



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,031	04/24/2001	David Stark	PBC.2001.03	6179
44987	7590	12/02/2004	EXAMINER	
HARRITY & SNYDER, LLP 11240 WAPLES MILL ROAD SUITE 300 FAIRFAX, VA 22030			CRAIG, DWIN M	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/841,031

Applicant(s)

STARK, DAVID

Examiner

Dwin M Craig

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-31 is/are allowed.
- 6) ☒ Claim(s) 1,2,7,8,14 and 15 is/are rejected.
- 7) ☒ Claim(s) 3-6, 9-13 and 16-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-31 have been presented for Examination.

#### Claim Objections

2. Independent **Claim 1** is objected to because of the following informalities: The phrase “*dynamically selectively delay*” on line 10 of Independent Claim 1, should read, “*dynamically and selectively delay*”. Appropriate correction is required.

#### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Independent **Claims 1 and 14** and dependent **Claims 2, 7, 8 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chen et al. U.S. Patent 6,005,337** in view of **Asato et al. U.S. Patent 5,212,782**.

3.1 As regards independent **Claims 1 and 14** the *Chen et al.* reference discloses a method of designing digital signal processing hardware (**Col. 2 Lines 50-56**), to implement a z-domain transfer function and specifying said transfer function (**Col. 6 Lines 20-45**), and without regard to latency characteristics, specifying a first hardware stage to process said signal samples in accordance with said transfer function (**Figure 3 Col. 6 Lines 51-65**).

However, the *Chen et al.* reference does not expressly disclose specifying a second hardware stage to dynamically selectively delay said signal samples processed by said first hardware stage such that the combined first and second stage latency for the processing of said signal samples is a constant.

The *Asato et al.* reference discloses a hardware stage to dynamically selectively delay said signal samples processed by a first hardware stage such that the combined first and second stage latency for the processing of said signal samples is a constant (**Figures 4, 6 and 7 Col. 2 Lines 1-16** “*Note that in Figure 7 there is a process to determine the amount of delay coming through a data path and a determination as to where a pipeline needs to be inserted, It is further noted by the Examiner that insertion of a pipeline is enabled and supported by the Applicant’s specification on page 3 lines 1-8*”).

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made, to have used the *pipeline* methods, as disclosed in the *Asato et al.* reference in combination with the *Z-transform* methods of the *Chen et al.* reference because, due to changing performance metrics that might exist in using different electronic components, there is a need to provide a simple and efficient technique for determining delays encountered in datapath elements (*Asato et al. Col. 1 Lines 65-67*).

**3.2** As regards dependent **Claims 2 and 15** the *Chen et al.* reference discloses a generic data processor (DSP) (**Col. 1 Lines 50-56**).

**3.3** As regards dependent **Claims 7 and 8** the *Chen et al.* reference discloses a target technology, which is an FPGA (**Col. 2 Lines 49-56**).

#### **Allowable Subject Matter**

**4.** The following is a statement of reasons for the indication of allowable subject matter: In regards to Independent **Claim 20** limitations, the following limitations, in combination with other limitations are a non-obvious modification over the prior art, “*dynamically adjusting the number of said D samples to maintain the sum of V and D as a constant*”. In regards to independent **Claim 26** the prior art does not teach or make obvious the following limitations, in combination with other limitations, “*dynamically adjusting the pipeline length of D(z) to maintain the sum of V and D as a constant.*”

**4.1** Dependent **Claims 21-24 and 27-31** are allowed as they depend from allowed base claims.

**4.2** Dependent **Claims 3-6, 9-13 and 16-19** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### **Conclusion**

**5.** **Claims 1-31** have been presented for Examination. **Claims 1, 2, 7, 8, 14 and 15** are rejected. **Claims 3-6, 9-13 and 16-19** are objected to. **Claims 20-31** are allowed.

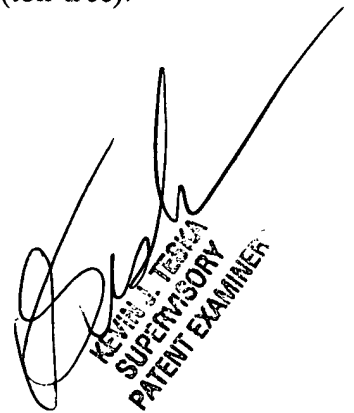
**5.1** This action is **NON-Final**.

**5.2** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwain M Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on (571)272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC



KEVIN J. TESKA  
SUPERVISORY  
PATENT EXAMINER